

MMWR

MORBIDITY AND MORTALITY WEEKLY REPORT

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Arboviral Infections of the Central Nervous System — United States, 1996–1997

Arboviruses include mosquito-borne and tick-borne agents that persist in nature in complex cycles involving birds or mammals, including humans. Arboviral infection can cause fever, headache, meningitis, encephalitis, and sometimes death. During 1996–1997, health departments in 19 states reported to CDC 286 confirmed or probable* cases (eight fatal) of arboviral encephalitis in humans (132 cases in 1996 and 154 provisionally in 1997). Surveillance programs in 18 states detected enzootic arboviral activity in mosquito or sentinel or wild bird populations, and cases of arboviral disease were recognized among horses or emus in 24 states. This report summarizes information about arboviral infection of the central nervous system in the United States during 1996–1997.

La Crosse Encephalitis

During 1996–1997, a total of 252 La Crosse encephalitis (LAC) cases (103 confirmed and 149 probable; one fatal) were reported from 12 states. Patients ranged in age from 5 months to 78 years (mean: 9 years), and 95% of cases occurred in persons aged <18 years; 153 (61%) cases occurred in males, 209 (83%) in whites, and seven (3%) in persons of races other than white; in 36 (14%) cases, race was unspecified. Dates of onset of illness ranged from late June to early November. West Virginia reported 139 cases (55% of the national total), an average of 3.8 per 100,000 population per year (Table 1). Among persons aged <18 years, who accounted for 133 (96%) of the total number of cases in West Virginia, the incidence was 15.8 per year. A fatal case

*For national surveillance, a confirmed case is defined as febrile illness associated with neurologic manifestations ranging from headache to aseptic meningitis or encephalitis with onset during a period when arbovirus transmission is likely to occur, plus at least one of the following criteria: 1) fourfold or greater serial change in serum antibody titer; 2) isolation of virus from, or demonstration of viral antigen or genomic sequences in, tissue, blood, cerebrospinal fluid, or other body fluid; or 3) demonstration of specific immunoglobulin M (IgM) antibody in serum or cerebrospinal fluid by IgM-capture enzyme immunoassay with confirmation by demonstration of IgG antibodies by another serologic assay (e.g., neutralization or hemagglutination inhibition). A probable case is defined as compatible illness occurring during a period when arbovirus transmission is likely, plus an elevated but stable (twofold or less serial change) antibody titer to an arbovirus (e.g., ≥ 320 by hemagglutination inhibition, ≥ 128 by complement fixation, ≥ 256 by immunofluorescence, ≥ 160 by neutralization, or ≥ 400 by IgM-capture enzyme immunoassay) (1).

Arboviral Infections — Continued

TABLE 1. Number and annual rate* of reported human cases of La Crosse encephalitis (LAC), eastern equine encephalomyelitis (EEE), and St. Louis encephalitis (SLE), by state — United States, 1996–1997

| State | 1996 population (thousands) [†] | LAC | | | EEE | | | SLE | | |
|----------------|--|------------|------------|----------------|----------|-----------|----------------|----------|-----------|----------------|
| | | No. | | Annual rate | No. | | Annual rate | No. | | Annual rate |
| | | 1996 | 1997 | | 1996 | 1997 | | 1996 | 1997 | |
| Alabama | 4,273 | 0 | 0 | — | 1 | 0 | 0.01 | 0 | 1 | 0.01 |
| California | 31,878 | 0 | 0 | — | 0 | 0 | — | 0 | 1 | 0.002 |
| Florida | 14,400 | 0 | 0 | — | 1 | 3 | 0.01 | 0 | 9 | 0.03 |
| Georgia | 7,353 | 0 | 0 | — | 0 | 3 | 0.02 | 0 | 0 | — |
| Illinois | 11,847 | 13 | 3 | 0.07 | 0 | 0 | — | 0 | 0 | — |
| Indiana | 5,841 | 3 | 1 | 0.03 | 0 | 0 | — | 0 | 0 | — |
| Kentucky | 3,884 | 0 | 3 | 0.04 | 0 | 0 | — | 0 | 0 | — |
| Louisiana | 4,351 | 1 | 0 | 0.01 | 1 | 4 | 0.06 | 0 | 0 | — |
| Massachusetts | 6,092 | 0 | 0 | — | 0 | 1 | 0.01 | 0 | 0 | — |
| Michigan | 9,594 | 0 | 0 | — | 0 | 1 | 0.01 | 0 | 0 | — |
| Minnesota | 4,658 | 7 | 5 | 0.13 | 0 | 0 | — | 0 | 0 | — |
| North Carolina | 7,323 | 3 | 4 | 0.05 | 2 | 0 | 0.01 | 0 | 0 | — |
| Ohio | 11,173 | 20 | 13 | 0.15 | 0 | 0 | — | 0 | 0 | — |
| South Carolina | 3,699 | 0 | 0 | — | 0 | 2 | 0.03 | 0 | 0 | — |
| Tennessee | 5,320 | 1 | 10 | 0.10 | 0 | 0 | — | 0 | 0 | — |
| Texas | 19,128 | 1 | 1 | 0.01 | 0 | 0 | — | 2 | 0 | 0.01 |
| Virginia | 6,675 | 2 | 6 | 0.06 | 0 | 0 | — | 0 | 1 | 0.01 |
| West Virginia | 1,826 | 66 | 73 | 3.81 | 0 | 0 | — | 0 | 1 | 0.03 |
| Wisconsin | 5,160 | 8 | 8 | 0.16 | 0 | 0 | — | 0 | 0 | — |
| Total | | 125 | 127 | | 5 | 14 | | 2 | 13 | |

*Per 100,000 population.

[†]U.S. Department of Commerce, Economics and Statistics Administration, Bureau of the Census.

occurred in a 19-month-old child in Minnesota who became ill in early August 1997 and died in November.

St. Louis Encephalitis

During 1996–1997, a total of 15 St. Louis encephalitis (SLE) cases (14 confirmed and one probable; two fatal) were reported from six states (Table 1). Patients ranged in age from 6 months to 83 years (mean: 54 years). Ten (67%) cases occurred in females; 12 (80%), in whites; and two (13%), in blacks; in one (7%) case, race was unspecified. Dates of onset of illness ranged from July 21 to late October. During 1997, Florida reported nine cases from seven central or southern counties. Enzootic SLE virus activity in sentinel chickens was detected several weeks before the first human case was diagnosed, prompting state and local public health authorities to issue public health alerts and intensify mosquito-control measures.

Eastern Equine Encephalomyelitis

During 1996–1997, a total of 19 eastern equine encephalomyelitis (EEE) cases (all confirmed; five fatal) were reported from eight states (Table 1). Patients ranged in age from 10 months to 81 years (mean: 35 years); 10 (53%) cases occurred in males; 15 (79%), in whites; and three (16%), in blacks; in one (5%) case, race was unspecified.

Arboviral Infections — Continued

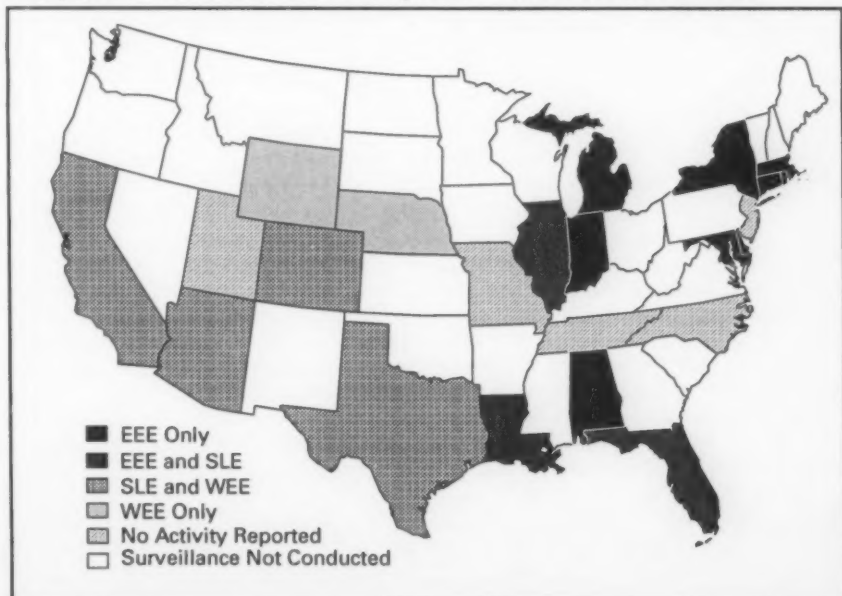
In all but one case, dates of onset of illness ranged from early July to mid-November. The exception was a 58-year-old man from southwestern Alabama who became ill with EEE on January 8, 1996, and died in early February. The most likely location of the patient's exposure to EEE virus was in a neighboring county at a quail farm near a hardwood swamp.

Enzootic and Epizootic Arbovirus Activity

During 1996–1997, a total of 23 states conducted surveillance for SLE, EEE, and/or western equine encephalomyelitis (WEE) virus activity using virus isolation or antigen detection in captured mosquitoes, virus-specific antibody assays in sentinel or wild birds, or a combination of methods. Enzootic arboviral activity was reported from 18 states (Figure 1).

Although arboviral disease cases among horses or other animals are not officially reported to CDC, some state health departments attempt to track such cases because cases of EEE and WEE in horses may indicate incipient human cases. During 1996–1997, a total of 274 cases of arboviral encephalitis in horses (151 cases in 1996 and 123 in 1997) were reported to public health authorities in 21 states (Table 2). In addition, epizootics or sporadic clinical cases of hemorrhagic enterocolitis associated with infection with EEE virus (Alabama, Arkansas, Connecticut, Florida, Georgia, Louisiana, Maryland, Mississippi, North Carolina, Rhode Island, Texas, Virginia, and Wisconsin)

FIGURE 1. Reported enzootic activity of St. Louis encephalitis (SLE), eastern equine encephalomyelitis (EEE), or western equine encephalomyelitis (WEE) virus in mosquitoes or sentinel or wild birds, by state — United States, 1996–1997



Arboviral Infections — Continued

TABLE 2. Number of eastern (EEE) and western (WEE) equine encephalomyelitis cases among horses, by state — United States, 1996–1997

| State | EEE | | WEE | |
|----------------|------|------|------|------|
| | 1996 | 1997 | 1996 | 1997 |
| Alabama | 9 | 13 | 0 | 0 |
| Arkansas | 0 | 1 | 0 | 0 |
| California | 0 | 0 | 1 | 4 |
| Colorado | 0 | 0 | 3 | 0 |
| Connecticut | 0 | 0 | 0 | 0 |
| Florida | 69 | 42 | 0 | 0 |
| Georgia | 5 | 11 | 0 | 0 |
| Indiana | 0 | 1 | 0 | 0 |
| Kentucky | 1 | 1 | 0 | 0 |
| Louisiana | 0 | 17 | 0 | 0 |
| Maryland | 0 | 0 | 0 | 0 |
| Minnesota | 2 | 0 | 1 | 0 |
| Mississippi | 29 | 4 | 0 | 0 |
| Nebraska | 0 | 0 | 1 | 0 |
| New Hampshire | 3 | 0 | 0 | 0 |
| North Carolina | 10 | 3 | 0 | 0 |
| North Dakota | 0 | 0 | 0 | 3 |
| Ohio | 0 | 1 | 0 | 0 |
| Rhode Island | 0 | 1 | 0 | 0 |
| South Carolina | 6 | 1 | 0 | 0 |
| Tennessee | 0 | 3 | 0 | 0 |
| Texas | 6 | 15 | 0 | 2 |
| Virginia | 5 | 0 | 0 | 0 |
| Wisconsin | 0 | 0 | 0 | 0 |
| Total | 145 | 114 | 6 | 9 |

or central nervous system disease cases associated with infection with WEE virus (California) were detected on emu farms in 14 states.

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Editorial Note: During 1996–1997, LAC encephalitis remained the most frequently reported arboviral disease in the United States. The fatal case of LAC encephalitis reported from Minnesota during 1997 emphasizes that severe cases occur and can result in transient or permanent neurologic sequelae or death (2). The incidence, public health impact, and other aspects of this endemic disease are poorly understood and require further study. Ongoing CDC-supported studies and active surveillance efforts are expected to provide better estimates of the incidence of LAC encephalitis in West Virginia and other states (e.g., North Carolina) outside the north-central region, which has been most closely associated with LAC virus transmission. In addition, these studies will provide a better understanding of geographic and ecologic factors associated with LAC virus transmission (e.g., the relative contribution of treeholes and

Arboviral Infections — Continued

artificial containers such as used tires in the production of *Aedes triseriatus*, the eastern treehole mosquito and primary vector of LAC virus) (2).

SLE virus remains the most important cause of epidemic encephalitis in North America (3). Surveillance for early seasonal enzootic SLE virus transmission continues to be important in detecting and controlling outbreaks and reducing human risk through vector control and modification of human activity patterns (4). For example, in August 1997, following the detection of epizootic SLE virus activity in central Florida through active surveillance, public health authorities issued health alerts advising the public to 1) minimize outdoor activities during evening and nighttime hours (the peak biting period for *Culex nigripalpus*, the primary vector of SLE virus in Florida) (5), 2) ensure proper screening of residential doors and windows, 3) wear long-sleeved shirts and long pants when involved in nighttime outdoor activities, and 4) use DEET-containing repellents in an approved manner. These alerts may have prevented a more extensive outbreak by prompting residents to change their evening activity patterns (S. Wiersma, M.D., Florida Department of Health, personal communication, 1998) and may in part explain the marked difference in the severity of the Florida SLE epidemics of 1997 (nine cases, one death) and 1990 (223 cases, 11 deaths).

EEE is the most severe of the arboviral encephalitides, with an overall case-fatality rate of approximately 35% (6). The fatal EEE case in an Alabama resident during 1996 was unusual because it was the first human EEE case reported from Alabama since 1965, and the onset of illness was in January. In most regions of the United States where EEE virus is enzootic, transmission to humans usually occurs during May–October (7). This case illustrates that year-round EEE virus transmission can occur near the Gulf Coast.

The emu is an imported species of large, flightless bird farmed for meat and other products nationwide. Emus are highly susceptible to EEE virus infection, which typically results in acute hemorrhagic enterocolitis and death (8). High-titered viremias develop in infected emus; therefore, emus may contribute to EEE virus amplification in the peridomestic environment, placing humans at increased risk. In addition, EEE virus can be isolated from the bloody feces of infected emus, and emu-to-emu transmission of EEE virus has been documented experimentally (CDC, unpublished data, 1998). No human infections with EEE virus have been associated with raising or handling emus. In the eastern United States, vaccination of emus with EEE virus vaccines approved for use in horses is a common practice that can protect them against an otherwise lethal challenge dose of EEE virus under experimental conditions (CDC, unpublished data, 1998).

No human cases of WEE have been reported since 1994, and only three cases have been reported during the 1990s. Reasons for the decrease in cases may include under-recognition and underdiagnosis of cases.

Health-care providers should consider arboviral infections in the differential diagnosis of all cases of aseptic meningitis and viral encephalitis, obtain appropriate specimens for laboratory testing, and promptly report cases to state health departments. Reasons for making a specific etiologic diagnosis in such cases include 1) ruling out diseases for which specific therapy is available, 2) better informing patients and their families about prognosis, and 3) alerting public health authorities to take appropriate control measures. Human disease risk can be effectively reduced with active environ-

Arboviral Infections — Continued

mental surveillance systems and appropriate mosquito-control measures, and by providing timely information to the public.

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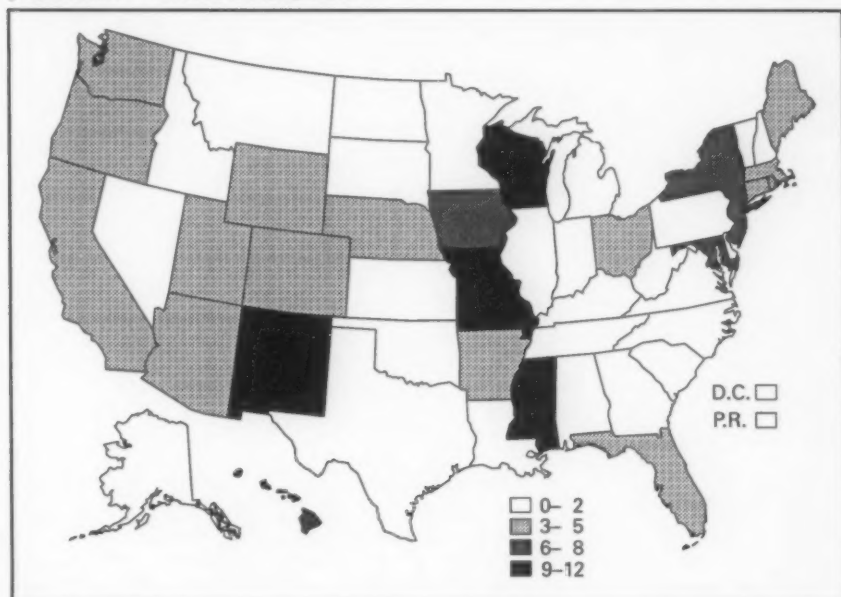
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Monitoring Environmental Disease — United States, 1997

One of the national health objectives for 2000 (HP2000) is to establish and monitor nonoccupational "sentinel" environmental diseases, including asthma, heatstroke, hypothermia, heavy metal poisoning, pesticide poisoning, carbon monoxide poisoning, acute chemical poisoning, and methemoglobinemia, in at least 35 states (baseline: 0 states in 1990) (objective 11.16) (1). To assess progress toward this objective, the Council of State and Territorial Epidemiologists (CSTE), the Association of Schools of Public Health, and CDC conducted a telephone survey of environmental epidemiologists in each of the 50 states, the District of Columbia, and Puerto Rico during June–August 1997. This report summarizes the results of that survey, which indicate that progress is being made toward the HP2000 objective.

Approximately 2–3 weeks before the telephone survey was conducted, a questionnaire on environmental disease surveillance systems in each jurisdiction was sent to the epidemiologist responsible for environmental health to allow time for gathering of information. The questionnaire inquired about each jurisdiction's surveillance activities, sources of surveillance data, funding, and goals. Each jurisdiction was asked to describe its surveillance activities from among the following: data collection only; data collection and review; or data collection, review, and case investigation. No additional definitions were provided, and interpretation of the three classifications was left to the respondent.

Responses were obtained from all 52 environmental epidemiologists. The telephone survey identified 174 environmental public health surveillance systems from 51 jurisdictions. The mean number of systems per jurisdiction was three; the median was two (range: zero to 12) (Figure 1). Of the 174, a total of 79 (45%) systems monitored lead exposure, with most systems monitoring childhood blood lead levels (BLLs) (51 [65%] of 79). The remaining 28 systems monitored nonoccupational adult

*Monitoring Environmental Disease — Continued***FIGURE 1. Number of environmental public health surveillance systems, by jurisdiction — United States, 1997**

lead exposures. The environmental diseases least frequently monitored were heat-stroke and hypothermia (four systems each) (Table 1). One jurisdiction (Missouri) had surveillance systems for all 12 of the environmental public health conditions covered by the survey. One jurisdiction did not have any surveillance systems.

Using the description for each disease monitoring system described in this report, 15 (9%) of the surveillance systems collected data only, 46 (27%) collected data and conducted reviews, and 110 (64%) collected data and conducted both reviews and case investigations. Asthma was the only condition for which no systems conducted case investigations.

Sources of Data

Data about environmental disease surveillance were collected from numerous sources. Of the 79 lead exposure surveillance systems, 76 (96%) provided information about primary source of data. Of these, 71 (93%) used laboratory data as the primary source of information. Laboratory reporting was mandatory in jurisdictions covered by 65 (86%) of 76 systems. Data about BLLs were gathered electronically by 35 (46%) systems. Five lead surveillance systems used electronic reporting exclusively.

Of the remaining 95 nonlead environmental disease surveillance systems, three did not provide information about primary source of data. The sources of data for the other 92 systems included laboratories (37 [40%]), clinicians (19 [21%]), hospitals (14 [15%]), poison-control centers (seven [8%]), and other sources (15 [16%]). Labora-

Monitoring Environmental Disease — Continued

TABLE 1. Number of environmental public health surveillance systems, by type* and classification of system — United States,[†] 1997

| Type of system | Classification | | | Total |
|---------------------------------------|----------------------|----------------------------|---|--------------|
| | Data collection only | Data collection and review | Data collection, review, and case investigation | |
| Elevated blood lead levels | 4 | 9 | 66 | 79 |
| Children | 1 | 2 | 48 | 51 |
| Adults [‡] | 3 | 7 | 18 | 28 |
| Pesticide poisoning | 4 | 4 | 12 | 20 |
| Mercury poisoning | 0 | 6 | 8 | 15 |
| Arsenic poisoning | 0 | 4 | 6 | 11 |
| Cadmium poisoning | 0 | 4 | 6 | 11 |
| Methemoglobinemia | 2 | 2 | 5 | 9 |
| Acute chemical poisoning [§] | 1 | 4 | 3 | 8 |
| Carbon monoxide poisoning | 3 | 2 | 2 | 7 |
| Asthma | 1 | 5 | 0 | 6 |
| Heatstroke | 0 | 3 | 1 | 4 |
| Hypothermia | 0 | 3 | 1 | 4 |
| Total | 15 | 46 | 110 | 174** |

*The 12 nonoccupational sentinel environmental conditions specified by the 2000 national health objective 11.16 (7).

[†]Includes District of Columbia and Puerto Rico.

[‡]Excludes cases associated with occupational exposure.

[§]Acids, ammonia, bases, chlorine, other inorganic substances, paints and dyes, volatile organic compounds, and polychlorinated biphenyls.

**Includes three surveillance systems that included data collection and case investigation but excluded routine review of cases.

tory reporting was mandatory in the jurisdictions covered by 27 (72%) of 37 systems gathering data from laboratories, and reporting by clinicians was mandatory in 15 (79%) of the 19 systems gathering data from clinicians. No nonlead surveillance systems received information electronically.

Funding

Thirty-six (71%) of 51 childhood lead monitoring systems and 14 (50%) of 28 adult lead monitoring systems were either entirely or largely dependent on federal funds for their operation. Twenty-one (23%) of 95 nonlead environmental disease monitoring systems received any federal funding.

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Editorial Note: The findings in this report indicate that childhood lead poisoning was the only "sentinel environmental disease" for which HP2000 objective 11.16 has been achieved (1). Although not every system met the requirement to be identified as a surveillance system (ongoing collection, analysis, and use of health data), most of the childhood lead monitoring systems collected, reviewed, and took appropriate action based on the data.

Monitoring Environmental Disease — Continued

The findings in this report are subject to at least two limitations. First, jurisdiction-based surveillance systems can have different case definitions. For example, although CDC recommends using BLLs ≥ 10 $\mu\text{g/dL}$ to identify children with elevated BLLs, some jurisdictions used higher values. Jurisdiction-specific case definitions may be necessary because of limited resources and other considerations. CDC, in collaboration with other agencies and organizations, is developing definitions for several environmental diseases such as carbon monoxide poisoning and asthma. Using a standard case definition may allow data from numerous jurisdictions to be more easily summarized and compared. However, each jurisdiction will base its environmental health priorities on its own needs and available resources. Second, >90% of the systems identified in the 1997 survey reviewed the data collected, and in most cases implemented activities based on the data. This survey did not collect information about the frequency or extent of data review or of follow-up activities. Usefulness of routinely collected environmental disease data depends on timely analysis of the data followed by dissemination of information to persons who "need to know," such as policy makers and program managers (2-7).

Surveillance systems should be simple, sensitive, representative, and timely to be most effective in controlling and preventing disease (8). Surveillance systems at the local, state, and national levels are useful for assessing case investigations, implementing control activities, evaluating interventions, monitoring trends, and identifying risk factors. A comprehensive integrated public health surveillance system that combines local, state, and national surveillance activities can best achieve the primary goal of public health surveillance, namely a reduction in disease morbidity and mortality (3). Progress toward the HP2000 objective is evident from the results of this survey. Adequate resources and increased public awareness about the value of surveillance systems in preventing and controlling disease are necessary to fully achieve the objective (2).

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Epidemic Malaria Transmission — Armenia, 1997

The dissolution of the Former Soviet Union (FSU) has resulted in the disruption of the health infrastructure in many of the republics, as indicated in part by increases in infectious diseases that were previously controlled (e.g., diphtheria, typhoid, and hepatitis A). In 1994, the Ministry of Health (MOH) of Armenia (1995 population: 3.5 million) detected the first locally acquired case of malaria since the 1940s; the number of imported cases (15) was approximately twice the annual average during 1986–1989 (seven). In 1995, although no locally acquired cases were reported, the number of imported cases increased to 502. In 1996 and 1997, the total (locally acquired and imported) number of reported cases of malaria was 347 and 841, respectively. This report summarizes surveillance for malaria in Armenia during 1996–1997.

Cases were initially identified based on clinical suspicion; confirmation was based on microscopic examination of blood smears by the national laboratory. All cases were caused by *Plasmodium vivax*. Local clinics and hospitals gathered data and reported this information to the regional public health offices, which in turn reported to the national level.

From 1996 to 1997, the incidence rate (IR) for all reported cases of malaria increased from nine to 22 per 100,000 population (Table 1). Locally acquired cases accounted for 567 (67%) of the 841 cases reported in 1997. Although 30 (37%) of 81 districts recorded malaria cases, seven (9%) reported locally acquired infections. In 1997, the Masis district registered 527 (63%) of the total and 505 (89%) of the locally acquired cases (IR=592 and 567 cases per 100,000 population, respectively) (Figure 1). The seasonal peak for locally acquired cases occurred in September (132 [23%]); 416 (73%) cases were reported during July–October (Figure 2).

To identify possible vectors, the MOH took a convenience sample of mosquitos using standard trapping techniques. *Anopheles maculipennis* was identified as the most common vector species captured (98%).

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TABLE 1. Number of locally acquired and imported cases of malaria and incidence rates (IR)*, by year — Armenia, 1986–1997†

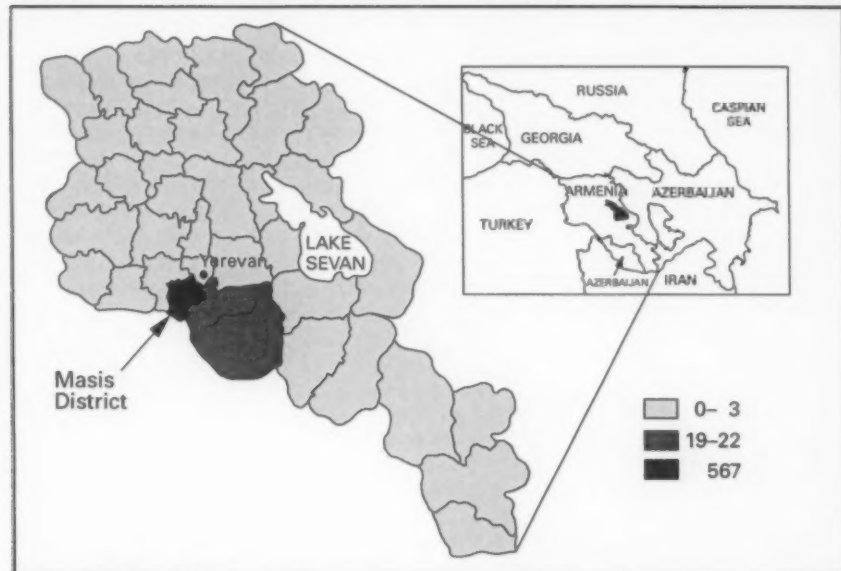
| Year | Locally acquired | | Imported | Total | |
|------|------------------|--------|----------|-------|--------|
| | No. | (IR) | | No. | (IR) |
| 1986 | 0 | | 9 | 9 | |
| 1987 | 0 | | 7 | 7 | |
| 1988 | 0 | | 8 | 8 | |
| 1989 | 0 | | 3 | 3 | |
| 1994 | 1 | (<0.1) | 15 | 16 | (0.4) |
| 1995 | 0 | | 502 | 502 | (13.3) |
| 1996 | 149 | (3.9) | 198 | 347 | (9.2) |
| 1997 | 567 | (15.0) | 274 | 841 | (22.2) |

*Per 100,000 population.

†Surveillance data were not available for 1990–1993.

Epidemic Malaria Transmission — Continued

FIGURE 1. Incidence rates* of locally acquired malaria, by district — Armenia, 1997



*Per 100,000 population.

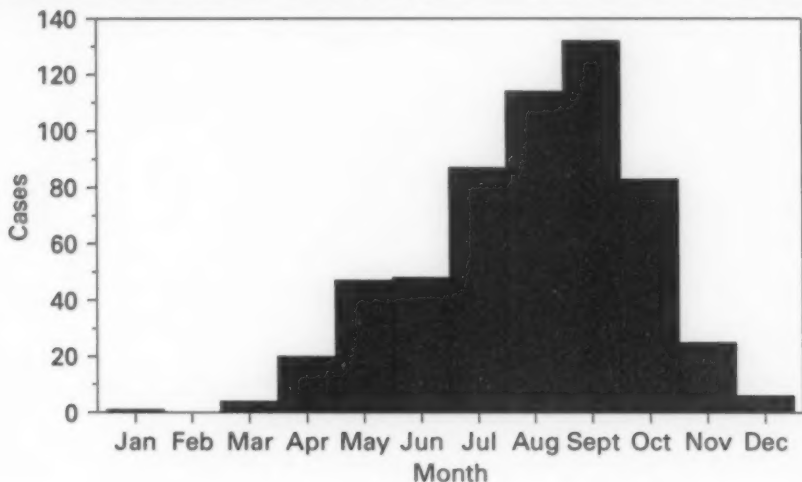
Editorial Note: The World Health Organization (WHO) estimates that malaria causes 300 to 500 million illness episodes and 1.5 to 2.7 million deaths worldwide each year (1). From 1945 to 1986, FSU-wide malaria eradication efforts (including mosquito vector control, case detection and treatment, and chemoprophylaxis) curtailed transmission in Armenia, one of the 15 Newly Independent States of the FSU. During 1988–1995, severe financial constraints and the war with Azerbaijan contributed to cessation of vector-control activities in Armenia (which had included the use of mosquito-larvivorous fish [*Gambusia affinis*], insecticide spraying, and the reduction of mosquito breeding sites). These circumstances, combined with an eroding health infrastructure, may have hindered new malaria cases from being diagnosed, treated, and reported properly during this period. Displaced persons returning from the war with Azerbaijan during the cease-fire accounted for many of the imported cases in 1995; the resurgence of locally transmitted malaria probably resulted from persons with imported cases transmitting infection to the increased density of vectors.

In December 1992, the MOH and CDC, with the support of the U.S. Agency for International Development, began restructuring the health information systems (HIS) in Armenia. The reform began with the development of an emergency surveillance system designed to detect acute health risks (2,3). By 1996, through additional training and technical support, the MOH adopted a countrywide, comprehensive, and sustainable HIS reform program*. The prompt detection of this malaria epidemic highlights the success of this Armenian HIS reform.

*Armenian Prikaz (administrative directive) no. 550, July 30, 1996.

Epidemic Malaria Transmission — Continued

FIGURE 2. Number of cases of locally acquired malaria, by month — Armenia, 1997



The magnitude of the increase in malaria may be underestimated because surveillance relied on clinical suspicion. Because few cases were seen until recently, physicians may not have suspected malaria and submitted blood smears for laboratory confirmation.

The next steps for malaria control and prevention in Armenia should focus on surveillance, clinical practice, public education, and environmental control. Enhanced surveillance will include 1) initiating active, case-based surveillance; 2) establishing a regional surveillance network because malaria is endemic in neighboring countries; and 3) conducting epidemiologic and entomologic studies to characterize the affected population, determine risk factors for acquisition and transmission, and target interventions. Improving clinical practice will require continuing medical education for physicians in the early diagnosis and treatment of malaria and improved microscopic diagnostic capabilities for rapid and accurate diagnosis. Such capabilities will be essential if *P. falciparum* malaria emerges, because treatment recommendations depend on the species detected. Community health education about recognizing malaria symptoms should be provided. Vector control should be conducted in the Masis district, especially during the peak transmission season (July to October). Efforts led by WHO are under way to institute some of these control measures during the next malaria season; additional control measures may be taken if resources become available.

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Age- and State-Specific Prevalence Estimates of Insured and Uninsured Persons — United States, 1995–1996

Lack of health insurance has been associated with delayed health care (1) and increased mortality (2). Underinsurance (i.e., the inability to pay out-of-pocket expenses despite having insurance) also may result in adverse health consequences (3). Insurance coverage varies with age and locality (4), but state-specific estimates of insurance status by age are not regularly published. To characterize insurance coverage status by age, CDC analyzed data from the Behavioral Risk Factor Surveillance System (BRFSS) for 1995–1996. Because persons aged 55–64 years are not yet eligible for Medicare, may be in fair or poor health, risk eroding retirement savings if they incur major medical expenses, and must pay high individual health premiums (5), characteristics of uninsured persons aged 55–64 years also were examined. This report summarizes the results of the analysis and indicates that a substantial proportion of all adults are either uninsured or underinsured.

The BRFSS is a continuous, state-based, random-digit-dialed telephone survey of persons aged ≥18 years in the United States (6). For this report, data collected during 1995 and 1996 were combined to decrease variance in estimates. The study included 186,493 respondents aged 18–64 years who responded to insurance questions; of these, 26,238 were aged 55–64 years. Estimates were statistically weighted by sex, age, and race/ethnicity to reflect the noninstitutionalized civilian population of each state. Standard errors were calculated taking into account the complex survey design. Prevalence estimates were reported only when the standard error was <30% of the estimate; as a result, state-specific rates for underinsured persons are not presented. Respondents were categorized as uninsured if they answered "no" to the question "Do you have any kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicare?" Respondents were categorized as underinsured if they answered "yes" to the preceding question and to the question "Was there a time during the last 12 months when you needed to see a doctor, but could not because of the cost?" (7). Adequate insurance was defined as reporting both being insured and having no access problems because of cost.

Overall, 16.3% of respondents were uninsured, 6.8% were underinsured, and 76.9% were adequately insured. Being uninsured was most frequently reported by persons aged 18–24 years (median for all states: 25.4%; range: 11.6%–39.9%) (Table 1); being underinsured, by persons aged 25–34 years (median: 7.5%; range: 4.6%–11.2%) and 35–44 years (median: 7.2%; range: 3.3%–11.1%); and being adequately insured, by persons aged 55–64 years (median: 84.4%; range: 71.7%–93.4%). Hawaii had the lowest prevalence of being uninsured for two of five age groups. Louisiana had the highest levels of being uninsured among three age groups, and Texas had the highest levels among two age groups.

Among persons aged 55–64 years, 5.2% (Maryland and Michigan) to 21.4% (Louisiana) were uninsured, and approximately 1.9% to 11.3% were underinsured. Although 35% of persons aged 55–64 years resided in the South, 45% of the uninsured and 44% of the underinsured in this age group resided in the South.* Women comprise 53% of

* Northeast—Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont; Midwest—Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin; South—Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia; West—Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

Insured and Uninsured Persons — Continued

TABLE 1. Percentage of persons aged 18–64 years who were uninsured, by state and age group — United States, Behavioral Risk Factor Surveillance System, 1995–1996

| State | 18–24 years | | 25–34 years | | 35–44 years | | 45–54 years | | 55–64 years | |
|----------------|-------------|-----|-------------|-----|-------------|-----|-------------|-----|-------------|-----|
| | % | SE* | % | SE | % | SE | % | SE | % | SE |
| Alabama | 24.1 | 2.5 | 22.7 | 1.7 | 15.5 | 1.3 | 12.0 | 1.4 | 13.6 | 1.7 |
| Alaska | 33.3 | 4.3 | 18.6 | 1.9 | 19.0 | 2.0 | 11.0 | 1.6 | 18.9 | 4.0 |
| Arizona | 31.3 | 3.1 | 22.1 | 2.3 | 19.3 | 2.2 | 14.0 | 1.9 | 9.8 | 1.7 |
| Arkansas | 28.2 | 3.0 | 20.7 | 1.8 | 20.8 | 1.6 | 16.7 | 1.7 | 15.6 | 1.7 |
| California | 38.7 | 2.3 | 26.3 | 1.3 | 18.6 | 1.5 | 14.8 | 1.4 | 15.1 | 1.6 |
| Colorado | 27.0 | 3.1 | 20.2 | 1.7 | 12.8 | 1.2 | 10.4 | 1.3 | 10.6 | 1.7 |
| Connecticut | 21.1 | 3.0 | 14.6 | 1.4 | 9.9 | 1.4 | 5.8 | 0.9 | 6.0 | 1.2 |
| Delaware | 23.5 | 2.8 | 14.0 | 1.5 | 10.4 | 1.0 | 8.8 | 1.2 | 11.5 | 1.7 |
| Florida | 34.5 | 2.4 | 23.8 | 1.4 | 20.3 | 1.2 | 15.0 | 1.2 | 14.5 | 1.3 |
| Georgia | 17.0 | 2.2 | 11.3 | 1.1 | 8.3 | 0.8 | 11.6 | 1.3 | 8.8 | 1.6 |
| Hawaii | 11.6 | 1.9 | 10.1 | 1.3 | 8.3 | 1.0 | 5.6 | † | 0.9 | † |
| Idaho | 29.3 | 2.1 | 19.3 | 1.3 | 15.5 | 1.1 | 13.0 | 1.3 | 12.5 | 1.4 |
| Illinois | 30.0 | 2.2 | 14.8 | 1.2 | 9.7 | 0.9 | 7.4 | 0.9 | 11.3 | 1.5 |
| Indiana | 19.9 | 2.1 | 16.3 | 1.4 | 10.6 | 1.0 | 7.5 | 1.0 | 10.8 | 1.5 |
| Iowa | 20.3 | 1.7 | 15.9 | 1.1 | 8.7 | 0.8 | 6.8 | 0.8 | 7.1 | 1.0 |
| Kansas | 23.4 | 2.6 | 16.6 | 1.5 | 9.2 | 1.0 | 8.0 | 1.1 | 8.2 | 1.5 |
| Kentucky | 27.1 | 2.2 | 20.1 | 1.4 | 14.3 | 1.2 | 12.9 | 1.2 | 12.6 | 1.4 |
| Louisiana | 33.8 | 2.8 | 28.7 | 2.0 | 21.2 | 1.7 | 22.7 | 2.0 | 21.4 | 2.4 |
| Maine | 33.6 | 3.8 | 18.2 | 1.9 | 17.2 | 1.6 | 13.2 | 1.6 | 12.9 | 2.0 |
| Maryland | 22.5 | 1.9 | 13.0 | 0.9 | 8.7 | 0.8 | 7.8 | 0.8 | 5.2 | 0.7 |
| Massachusetts | 22.0 | 3.0 | 14.5 | 1.4 | 10.7 | 1.1 | 8.4 | 1.3 | 5.8 | 1.5 |
| Michigan | 21.3 | 2.0 | 12.1 | 1.1 | 8.6 | 1.0 | 6.4 | 0.9 | 5.2 | 1.0 |
| Minnesota | 14.6 | 1.4 | 10.9 | 0.8 | 7.9 | 0.7 | 5.1 | 0.6 | 5.5 | 0.8 |
| Mississippi | 23.9 | 2.9 | 17.3 | 1.8 | 15.8 | 1.6 | 15.5 | 1.8 | 12.5 | 1.8 |
| Missouri | 28.0 | 3.2 | 16.9 | 1.5 | 16.3 | 1.7 | 12.6 | 1.7 | 13.8 | 2.1 |
| Montana | 28.5 | 3.3 | 23.6 | 2.0 | 17.8 | 1.5 | 17.5 | 1.8 | 9.7 | 1.8 |
| Nebraska | 17.0 | 2.5 | 10.8 | 1.3 | 9.1 | 1.1 | 7.5 | 1.2 | 8.0 | 1.4 |
| Nevada | 31.6 | 3.5 | 16.9 | 1.8 | 16.7 | 1.7 | 14.1 | 1.8 | 10.5 | 1.8 |
| New Hampshire | 32.8 | 3.7 | 15.3 | 1.6 | 9.3 | 1.1 | 7.3 | 1.2 | 12.7 | 2.0 |
| New Jersey | 18.0 | 2.4 | 15.7 | 1.8 | 9.8 | 1.4 | 6.5 | 1.0 | 6.0 | 1.2 |
| New Mexico | 39.8 | 4.3 | 24.6 | 2.5 | 21.0 | 2.1 | 18.2 | 2.2 | 12.9 | 2.2 |
| New York | 27.0 | 2.3 | 18.1 | 1.1 | 12.8 | 1.1 | 8.9 | 1.0 | 7.2 | 1.0 |
| North Carolina | 26.5 | 2.3 | 15.8 | 1.2 | 14.2 | 1.1 | 9.0 | 1.0 | 8.8 | 1.2 |
| North Dakota | 20.9 | 2.3 | 17.8 | 1.6 | 10.5 | 1.2 | 9.7 | 1.3 | 8.6 | 1.8 |
| Ohio | 30.1 | 3.2 | 13.9 | 2.0 | 11.1 | 1.5 | 6.7 | 1.2 | 8.0 | 1.7 |
| Oklahoma | 30.3 | 3.0 | 23.6 | 1.9 | 19.0 | 1.8 | 14.0 | 1.8 | 17.3 | 1.9 |
| Oregon | 30.0 | 2.4 | 19.5 | 1.4 | 13.2 | 1.0 | 9.9 | 1.0 | 9.9 | 1.3 |
| Pennsylvania | 22.1 | 2.1 | 15.0 | 1.2 | 11.1 | 0.9 | 7.9 | 0.8 | 7.6 | 1.1 |
| Rhode Island | 20.0 | 2.7 | 17.4 | 1.6 | 10.6 | 1.1 | 8.3 | 1.3 | 7.5 | 1.5 |
| South Carolina | 25.3 | 3.3 | 18.4 | 1.7 | 13.2 | 1.3 | 12.9 | 1.5 | 13.7 | 1.9 |
| South Dakota | 19.5 | 2.1 | 15.1 | 1.5 | 9.6 | 1.1 | 7.9 | 1.2 | 7.1 | 1.3 |
| Tennessee | 25.6 | 2.3 | 14.3 | 1.3 | 10.4 | 1.1 | 11.2 | 1.2 | 8.5 | 1.4 |
| Texas | 39.9 | 3.3 | 24.3 | 1.7 | 21.5 | 1.6 | 16.6 | 1.7 | 21.3 | 2.5 |
| Utah | 21.2 | 2.1 | 16.1 | 1.3 | 10.5 | 1.1 | 8.5 | 1.1 | 8.2 | 1.3 |
| Vermont | 21.2 | 2.5 | 16.4 | 1.3 | 12.2 | 1.1 | 12.1 | 1.2 | 11.8 | 1.4 |
| Virginia | 24.4 | 2.7 | 15.6 | 1.4 | 11.6 | 1.2 | 12.1 | 1.7 | 12.5 | 2.0 |
| West Virginia | 33.4 | 2.7 | 27.8 | 1.7 | 20.1 | 1.4 | 12.9 | 1.3 | 12.6 | 1.4 |
| Washington | 25.1 | 2.0 | 17.7 | 1.2 | 10.8 | 0.1 | 9.2 | 0.9 | 7.6 | 1.0 |
| Wisconsin | 21.7 | 2.8 | 12.1 | 1.6 | 7.7 | 1.0 | 5.8 | 1.0 | 6.6 | 1.3 |
| Wyoming | 36.6 | 2.6 | 25.1 | 1.6 | 16.5 | 1.1 | 12.4 | 1.2 | 14.7 | 1.6 |
| Median | 25.4 | | 16.9 | | 11.9 | | 10.1 | | 10.5 | |

*Standard error.

†SE was <30% of the estimate.

Insured and Uninsured Persons — Continued

persons aged 55–64 years and 56% of the uninsured in this age group. Although widowed and separated women were 1.3 times more likely to be uninsured than men of similar marital status, most (53%) uninsured women were married. Blacks and Hispanics represented 9% and 6%, respectively, of persons aged 55–64 years and 15% each of uninsured persons in this age group. Blacks and Hispanics aged 55–64 years reported higher mean rates of being uninsured than did whites; the uninsured rate for blacks in this age group ranged from 1.3 to 2.6 times the rate for whites in the West and Midwest, respectively; for Hispanics the uninsured rate ranged from 2.3 to 3.4 times the rate for whites in the Northeast and West, respectively. Among persons aged 55–64 years, 40% of uninsured persons and 30% of underinsured persons reported an annual household income of <\$15,000.

In a separate analysis, BRFSS estimates for uninsured persons were compared with those from the 1995 National Health Interview Survey (NHIS) Health Insurance supplement (8). For this supplement, insurance status was determined by responses to a series of questions about specific types of insurance plans, including private, public, military, Indian Health Service, or single-purpose plans. Respondents with any of these types of insurance plans were categorized as insured. A total of 54,495 respondents aged 18–64 years were included for analysis; 7288 were aged 55–64 years.

Between the two data sources, no statistically significant differences in national prevalence were observed for uninsured persons. However, the NHIS prevalence estimate for persons aged 55–64 years (9.3%¹) was lower than the BRFSS estimate (11.0%). By region, NHIS estimates of being uninsured were slightly lower than BRFSS means for persons aged 55–64 years; differences ranged from 0.1% in the Northeast to 2.6% in the South.

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Editorial Note: The findings in this report are consistent with previous studies that have documented that persons aged 18–24 years had the highest rates of being uninsured and that persons aged 55–64 years had the highest rates of being insured (4). State variation in insurance coverage has been reported (4,7) and may be related to differences in employment-based health coverage (4). The regional and state variation found among persons aged 55–64 years has not been reported.

¹This percentage may differ from other published studies using NHIS data. CDC's National Center for Health Statistics data include persons with only single purpose insurance plans and persons with Indian Health coverage as uninsured.

Insured and Uninsured Persons — Continued

The findings in this report indicate that a substantial proportion of all adults, including those aged 55–64 years, are either uninsured or underinsured, placing these persons at increased risk for unnecessary morbidity or mortality (1–3). Approaches to increase coverage for these populations include more affordable private insurance, a national health insurance program, or allowing certain segments of the population to purchase Medicare. Although the purchase of Medicare coverage might appeal to many uninsured persons, particularly those aged 55–64 years, those with household incomes <\$15,000 would probably be unable to purchase Medicare coverage without assistance.

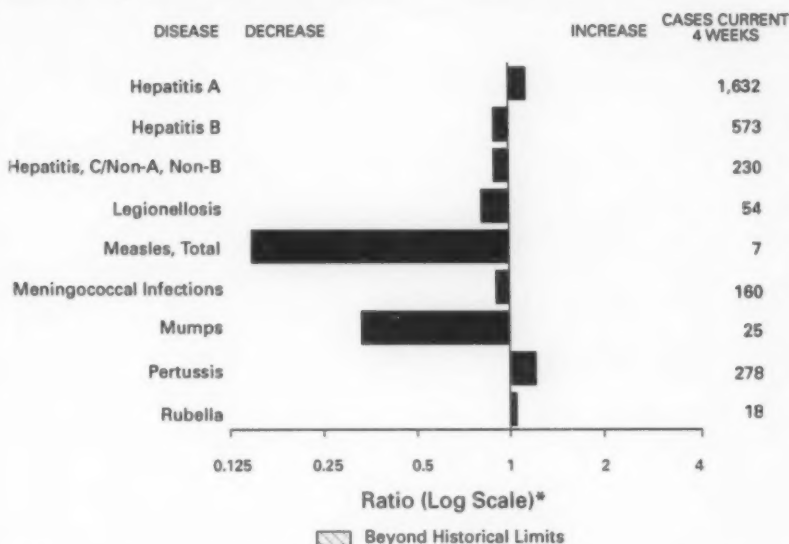
The findings in this report are subject to at least three limitations. First, because these results are based on self-reported telephone survey data, the number of uninsured persons is a conservative estimate and the findings are subject to reporting biases. Second, differences observed between NHIS and BRFSS regional estimates of the percentage of persons aged 55–64 years who are uninsured probably reflect methodologic differences. Finally, when combined for 1995–1996, BRFSS data provided stable state estimates of insurance status; however, similar information at a local level is not available and would be useful for policy development and health planning.

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Errata: Vol. 47, No. 21

In the article "Assessing Adolescent Pregnancy—Maine, 1980–1996," two errors occurred. On page 434, the name of a survey was incorrect. The sentence that begins on the 12th line of the first full paragraph should read, "The *Maine Youth Risk Behavior Survey*, a survey of adolescents in grades 9–12, was used to obtain information about adolescent sexual behavior." On page 436, the students being discussed were incorrectly identified. The last sentence of the first full paragraph should read, "The percentage of males and females in *high school* who had ever had sexual intercourse was 58% in 1991, 49% in 1995, and 52% in 1997; the changes in these percentages were not statistically significant."

FIGURE 1. Selected notifiable disease reports, comparison of provisional 4-week totals ending June 27, 1998, with historical data — United States

*Ratio of current 4-week total to mean of 15 4-week totals (from previous, comparable, and subsequent 4-week periods for the past 5 years). The point where the hatched area begins is based on the mean and two standard deviations of these 4-week totals.

TABLE 1. Summary — provisional cases of selected notifiable diseases, United States, cumulative, week ending June 27, 1998 (25th Week)

| | Cum. 1998 | | Cum. 1998 |
|--|-----------|---|-----------|
| Anthrax | - | Plague | - |
| Brucellosis | 34 | Poliomyelitis, paralytic [†] | - |
| Cholera | 4 | Psittacosis | 21 |
| Congenital rubella syndrome | 3 | Rabies, human | - |
| Cryptosporidiosis* | 846 | Rocky Mountain spotted fever (RMSF) | 81 |
| Diphtheria | 1 | Streptococcal disease, invasive Group A | 1,148 |
| Encephalitis: California* | 2 | Streptococcal toxic-shock syndrome* | 33 |
| eastern equine* | - | Syphilis, congenital** | 128 |
| St. Louis* | - | Tetanus | 12 |
| western equine* | - | Toxic-shock syndrome | 65 |
| Hansen Disease | 58 | Trichinosis | 6 |
| Hantavirus pulmonary syndrome*† | 4 | Typhoid fever | 135 |
| Hemolytic uremic syndrome, post-diarrheal* | 16 | Yellow fever | - |
| HIV infection, pediatric*‡ | 106 | | |

-no reported cases

*Not notifiable in all states.

†Updated weekly from reports to the Division of Viral and Rickettsial Diseases, National Center for Infectious Diseases (NCID).

‡Updated monthly to the Division of HIV/AIDS Prevention—Surveillance and Epidemiology, National Center for HIV, STD, and

TB Prevention (NCHSTP), last update May 24, 1998.

§One suspected case of polio with onset in 1998 has been reported to date.

**Updated from reports to the Division of STD Prevention, NCHSTP.

TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending June 27, 1998, and June 21, 1997 (25th Week)

| Reporting Area | AIDS | | Chlamydia | | Escherichia coli O157:H7 | | Gonorrhea | | Hepatitis C/NA,NB | |
|----------------|------------|-----------|-----------|-----------|--------------------------|--------------------|-----------|-----------|-------------------|-----------|
| | Cum. 1998* | Cum. 1997 | Cum. 1998 | Cum. 1997 | NETSS ¹ | PHLIS ¹ | Cum. 1998 | Cum. 1997 | Cum. 1998 | Cum. 1997 |
| | | | | | | | | | | |
| UNITED STATES | 20,034 | 27,944 | 244,571 | 235,320 | 685 | 357 | 143,519 | 137,638 | 1,891 | 1,636 |
| NEW ENGLAND | 640 | 1,151 | 9,161 | 8,239 | 103 | 69 | 2,430 | 2,803 | 23 | 33 |
| Maine | 13 | 25 | 457 | 452 | 5 | - | 30 | 28 | - | - |
| N.H. | 21 | 17 | 441 | 370 | 10 | 16 | 45 | 57 | - | - |
| Vt. | 10 | 24 | 187 | 188 | 4 | 4 | 13 | 24 | - | 1 |
| Mass. | 275 | 462 | 4,062 | 3,308 | 57 | 38 | 975 | 1,050 | 22 | 29 |
| R.I. | 58 | 80 | 1,199 | 981 | 3 | 1 | 175 | 231 | 1 | 3 |
| Conn. | 283 | 543 | 2,815 | 2,860 | 16 | 10 | 1,192 | 1,413 | - | - |
| MID. ATLANTIC | 5,695 | 8,425 | 29,581 | 27,575 | 72 | 18 | 16,406 | 15,698 | 200 | 145 |
| Upstate N.Y. | 710 | 1,338 | N | N | 50 | - | 2,878 | 2,848 | 154 | 107 |
| N.Y. City | 3,153 | 4,138 | 16,364 | 14,269 | 3 | 6 | 7,046 | 6,324 | - | - |
| N.J. | 993 | 1,861 | 4,626 | 4,742 | 19 | 11 | 2,631 | 3,457 | - | - |
| Pa. | 839 | 1,088 | 8,591 | 8,564 | N | 1 | 3,851 | 4,069 | 46 | 38 |
| E.N. CENTRAL | 1,518 | 1,977 | 41,074 | 34,891 | 134 | 67 | 27,683 | 20,611 | 248 | 320 |
| Ohio | 281 | 408 | 11,921 | 10,434 | 32 | 12 | 7,157 | 6,439 | 6 | 7 |
| Ind. | 293 | 359 | 2,706 | 4,204 | 46 | 20 | 1,769 | 2,820 | 3 | 9 |
| Ill. | 610 | 608 | 11,994 | 6,231 | 29 | - | 9,589 | 3,030 | 11 | 52 |
| Mich. | 252 | 473 | 10,232 | 6,678 | 27 | 17 | 7,480 | 6,197 | 228 | 234 |
| Wis. | 82 | 129 | 4,221 | 5,144 | N | 18 | 1,698 | 2,125 | - | 18 |
| W.N. CENTRAL | 351 | 536 | 14,555 | 15,081 | 80 | 46 | 7,017 | 6,566 | 110 | 33 |
| Minn. | 56 | 99 | 2,305 | 3,143 | 30 | 24 | 814 | 1,091 | 5 | 2 |
| Iowa | 20 | 66 | 2,010 | 2,222 | 21 | - | 638 | 598 | 11 | 16 |
| Mo. | 176 | 254 | 5,634 | 5,585 | 10 | 17 | 4,034 | 3,493 | 90 | 4 |
| N. Dak. | 4 | 4 | 290 | 408 | 1 | 2 | 29 | 26 | - | 2 |
| S. Dak. | 9 | 2 | 788 | 595 | 2 | 1 | 125 | 62 | - | 2 |
| Nebr. | 36 | 48 | 1,023 | 931 | 7 | - | 346 | 341 | 2 | 2 |
| Kans. | 50 | 63 | 2,505 | 2,217 | 9 | 2 | 1,031 | 955 | 2 | 7 |
| S. ATLANTIC | 5,037 | 7,208 | 52,583 | 44,769 | 48 | 29 | 42,159 | 43,145 | 96 | 108 |
| Del. | 57 | 111 | 1,210 | 612 | - | 1 | 649 | 542 | - | - |
| Md. | 571 | 948 | 4,001 | 3,446 | 12 | 4 | 4,576 | 5,370 | 5 | 3 |
| D.C. | 413 | 533 | N | N | 1 | - | 1,656 | 1,959 | - | - |
| Va. | 368 | 599 | 5,135 | 5,289 | N | 7 | 2,849 | 3,762 | 5 | 10 |
| W. Va. | 47 | 57 | 1,309 | 1,427 | N | 2 | 371 | 455 | 4 | 9 |
| N.C. | 335 | 364 | 10,801 | 7,935 | 11 | 10 | 9,034 | 7,724 | 12 | 28 |
| S.C. | 318 | 371 | 9,002 | 5,919 | 1 | - | 5,823 | 5,350 | 1 | 25 |
| Ga. | 608 | 859 | 11,989 | 7,928 | 8 | - | 9,896 | 9,284 | 9 | - |
| Fla. | 2,320 | 3,366 | 9,136 | 12,213 | 12 | 5 | 7,305 | 8,499 | 60 | 33 |
| E.S. CENTRAL | 788 | 828 | 17,268 | 16,319 | 39 | 11 | 16,347 | 16,170 | 74 | 180 |
| Ky. | 101 | 114 | 2,984 | 3,149 | 10 | - | 1,702 | 2,015 | 14 | 7 |
| Tenn. | 272 | 373 | 5,945 | 6,038 | 20 | 10 | 5,051 | 5,038 | 57 | 113 |
| Ala. | 233 | 196 | 4,679 | 3,847 | 9 | - | 5,906 | 5,458 | 3 | 6 |
| Miss. | 182 | 145 | 3,660 | 3,285 | U | 1 | 3,688 | 3,659 | U | 54 |
| W.S. CENTRAL | 2,473 | 3,120 | 35,864 | 22,547 | 44 | 5 | 20,492 | 16,690 | 512 | 191 |
| Ark. | 81 | 119 | 1,553 | 1,369 | 3 | 1 | 1,145 | 2,213 | 5 | 5 |
| La. | 415 | 538 | 6,429 | 3,941 | - | 1 | 5,274 | 3,711 | 10 | 101 |
| Okla. | 134 | 138 | 4,784 | 3,496 | 5 | 3 | 2,605 | 2,232 | 2 | 4 |
| Tex. | 1,843 | 2,325 | 23,098 | 13,741 | 36 | - | 11,468 | 8,534 | 495 | 81 |
| MOUNTAIN | 725 | 841 | 8,435 | 13,296 | 61 | 43 | 3,144 | 3,561 | 233 | 151 |
| Mont. | 13 | 22 | 595 | 477 | 4 | - | 23 | 20 | 4 | 10 |
| Idaho | 14 | 28 | 917 | 691 | 7 | 1 | 83 | 50 | 87 | 23 |
| Wyo. | 2 | 13 | 301 | 255 | 2 | - | 15 | 25 | 43 | 37 |
| Colo. | 127 | 224 | - | 2,884 | 19 | 11 | 1,083 | 947 | 13 | 21 |
| N. Mex. | 111 | 67 | 1,830 | 1,865 | 9 | 6 | 355 | 418 | 51 | 32 |
| Utah | 286 | 189 | 3,735 | 4,882 | N | 9 | 1,373 | 1,547 | 3 | 18 |
| Nev. | 57 | 65 | 748 | 815 | 13 | 10 | 74 | 119 | 19 | 3 |
| N.H. | 115 | 233 | 309 | 1,427 | 7 | 6 | 138 | 435 | 13 | 7 |
| PACIFIC | 2,807 | 3,858 | 36,050 | 52,803 | 104 | 69 | 7,841 | 11,394 | 395 | 475 |
| Wash. | 203 | 297 | 5,296 | 4,348 | 25 | 22 | 899 | 927 | 10 | 14 |
| Oreg. | 88 | 144 | 2,682 | 2,245 | 29 | 25 | 360 | 329 | 2 | 2 |
| Calif. | 2,463 | 3,377 | 26,201 | 44,733 | 48 | 18 | 6,232 | 9,911 | 328 | 375 |
| Alaska | 12 | 22 | 913 | 668 | 2 | - | 155 | 190 | 1 | - |
| Hawaii | 41 | 28 | 968 | 809 | N | 3 | 195 | 237 | 54 | 84 |
| Guam | - | 2 | 8 | 193 | N | - | 2 | 27 | - | - |
| P.R. | 834 | 760 | U | U | - | U | 187 | 319 | - | - |
| V.I. | 17 | 49 | U | U | N | U | U | U | U | U |
| Amer. Samoa | - | - | U | U | N | U | U | U | U | U |
| C.N.M.I. | - | 1 | N | U | N | U | 14 | 16 | - | 2 |

N: Not notifiable

U: Unavailable

-: no reported cases

C.N.M.I.: Commonwealth of Northern Mariana Islands

*Updated monthly to the Division of HIV/AIDS Prevention-Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention, last update May 24, 1998.

¹National Electronic Telecommunications System for Surveillance.²Public Health Laboratory Information System.

TABLE II. (Cont'd.) Provisional cases of selected notifiable diseases, United States, weeks ending June 27, 1998, and June 21, 1997 (25th Week)

| Reporting Area | Legionellosis | | Lyme Disease | | Malaria | | Syphilis (Primary & Secondary) | | Tuberculosis | | Rabies, Animal |
|----------------|---------------|-----------|--------------|-----------|-----------|-----------|--------------------------------|-----------|--------------|-----------|----------------|
| | Cum. 1998 | Cum. 1997 | Cum. 1998 | Cum. 1997 | Cum. 1998 | Cum. 1997 | Cum. 1998 | Cum. 1997 | Cum. 1998* | Cum. 1997 | Cum. 1998 |
| UNITED STATES | 485 | 395 | 2,376 | 2,154 | 513 | 706 | 3,182 | 4,157 | 4,757 | 8,080 | 3,274 |
| NEW ENGLAND | 24 | 27 | 677 | 458 | 19 | 31 | 37 | 81 | 147 | 209 | 634 |
| Maine | 1 | 1 | 1 | 3 | 3 | 1 | 1 | - | U | 15 | 101 |
| N.H. | 3 | 4 | 14 | 7 | 3 | 2 | 1 | - | 2 | 6 | 33 |
| Vt. | 1 | 4 | 4 | 3 | - | 2 | 3 | - | 1 | 3 | 30 |
| Mass. | 9 | 8 | 157 | 75 | 11 | 16 | 23 | 39 | 119 | 117 | 214 |
| R.I. | 4 | 5 | 31 | 43 | 2 | 2 | - | 1 | 25 | 16 | 35 |
| Conn. | 6 | 5 | 470 | 327 | - | 8 | 9 | 41 | U | 52 | 221 |
| MID. ATLANTIC | 102 | 69 | 1,328 | 1,346 | 132 | 210 | 100 | 201 | 1,051 | 1,430 | 709 |
| Upstate N.Y. | 30 | 17 | 767 | 445 | 34 | 34 | 16 | 20 | 140 | 194 | 509 |
| N.Y. City | 19 | 3 | 74 | 74 | 65 | 126 | 23 | 38 | 667 | 753 | U |
| N.J. | 4 | 12 | 193 | 344 | 19 | 37 | 18 | 87 | 244 | 293 | 86 |
| Pa. | 49 | 37 | 361 | 483 | 14 | 13 | 43 | 56 | U | 190 | 114 |
| E.N. CENTRAL | 151 | 145 | 39 | 35 | 46 | 72 | 452 | 352 | 282 | 853 | 48 |
| Ohio | 64 | 63 | 34 | 12 | 3 | 7 | 74 | 110 | 5 | 148 | 36 |
| Ind. | 23 | 25 | 4 | 10 | 2 | 7 | 97 | 75 | 6 | 76 | 4 |
| Ill. | 14 | 5 | - | 4 | 15 | 31 | 168 | 36 | 271 | 437 | 2 |
| Mich. | 30 | 31 | 1 | 10 | 25 | 17 | 89 | 59 | U | 140 | 6 |
| Wis. | 20 | 21 | U | U | 1 | 10 | 24 | 72 | U | 52 | 1 |
| W.N. CENTRAL | 37 | 26 | 22 | 26 | 29 | 23 | 71 | 82 | 118 | 238 | 345 |
| Minn. | 3 | 1 | 9 | 14 | 3 | 9 | 3 | 13 | U | 64 | 63 |
| Iowa | 4 | 7 | 9 | 1 | 3 | 6 | - | 3 | U | 27 | 77 |
| Mo. | 14 | 2 | 1 | 9 | 9 | 5 | 55 | 45 | 82 | 92 | 17 |
| N. Dak. | - | 2 | - | - | 2 | - | - | U | 1 | 5 | 74 |
| S. Dak. | 1 | 1 | - | - | - | - | 1 | - | 13 | 4 | 54 |
| Nebr. | 12 | 10 | 1 | 1 | - | 1 | 4 | 1 | 5 | 8 | 3 |
| Kans. | 3 | 3 | 2 | 1 | 2 | 2 | 8 | 20 | 18 | 38 | 57 |
| S. ATLANTIC | 64 | 54 | 220 | 186 | 124 | 117 | 1,332 | 1,673 | 862 | 1,484 | 1,030 |
| Del. | 7 | 6 | 5 | 39 | 1 | 2 | 15 | 14 | - | 17 | 17 |
| Md. | 12 | 11 | 147 | 117 | 43 | 41 | 318 | 469 | 137 | 140 | 253 |
| D.C. | 4 | 3 | 4 | 7 | 7 | 7 | 38 | 62 | 55 | 46 | - |
| Va. | 7 | 11 | 20 | 3 | 21 | 29 | 85 | 134 | 118 | 140 | 330 |
| W. Va. | N | N | 5 | 1 | - | - | 2 | 3 | 24 | 26 | 41 |
| N.C. | 5 | 6 | 12 | 7 | 10 | 7 | 369 | 344 | 200 | 172 | 136 |
| S.C. | 6 | 2 | 1 | 1 | 4 | 9 | 155 | 206 | 142 | 166 | 72 |
| Ga. | 2 | - | 2 | 1 | 15 | 14 | 238 | 292 | 186 | 273 | 81 |
| Fla. | 20 | 15 | 24 | 10 | 23 | 8 | 112 | 149 | U | 504 | 100 |
| E.S. CENTRAL | 20 | 20 | 23 | 35 | 14 | 16 | 533 | 897 | 160 | 605 | 121 |
| Ky. | 12 | 6 | 6 | 5 | 2 | 4 | 59 | 76 | U | 88 | 19 |
| Tenn. | 5 | 7 | 8 | 12 | 8 | 4 | 265 | 375 | U | 221 | 70 |
| Ala. | 3 | 2 | 9 | 4 | 4 | 5 | 130 | 233 | 160 | 197 | 32 |
| Miss. | U | 5 | U | 14 | U | 3 | 79 | 213 | U | 99 | U |
| W.S. CENTRAL | 16 | 5 | 10 | 13 | 17 | 8 | 405 | 587 | 53 | 1,198 | 104 |
| Ark. | - | - | 5 | 4 | 1 | 2 | 52 | 94 | 53 | 98 | 21 |
| La. | 1 | 1 | - | 1 | 4 | 4 | 150 | 197 | - | 85 | - |
| Okla. | 6 | 1 | - | 2 | 2 | 2 | 24 | 57 | U | 104 | 83 |
| Tex. | 9 | 3 | 5 | 6 | 10 | - | 179 | 239 | U | 911 | - |
| MOUNTAIN | 29 | 26 | 3 | 6 | 24 | 36 | 98 | 81 | 214 | 250 | 80 |
| Mont. | 1 | 1 | - | - | - | 2 | - | - | 12 | 6 | 29 |
| Idaho | - | 2 | 1 | - | 3 | - | - | - | 4 | 5 | - |
| Wyo. | 1 | 1 | - | 1 | - | - | - | - | 2 | 2 | 40 |
| Colo. | 5 | 6 | 1 | 2 | 7 | 17 | 7 | 3 | U | 49 | 1 |
| N. Mex. | 2 | 1 | - | - | 9 | 5 | 12 | 4 | 27 | 19 | 1 |
| Ariz. | 4 | 7 | - | 1 | 4 | 4 | 73 | 65 | 108 | 112 | 7 |
| Utah | 15 | 5 | - | 1 | 2 | 3 | 3 | 32 | 3 | 44 | 2 |
| Nev. | 1 | 3 | 1 | 2 | - | 4 | 2 | 6 | 29 | 46 | - |
| PACIFIC | 42 | 23 | 54 | 48 | 108 | 193 | 154 | 203 | 1,870 | 1,813 | 203 |
| Wash. | 4 | 6 | 1 | 1 | 9 | 8 | 12 | 7 | 117 | 141 | - |
| Oreg. | - | - | 8 | 10 | 10 | 10 | 2 | 4 | 57 | 73 | - |
| Calif. | 37 | 16 | 45 | 37 | 88 | 169 | 140 | 190 | 1,588 | 1,461 | 183 |
| Alaska | - | - | - | - | - | 3 | - | 1 | 22 | 44 | 20 |
| Hawaii | 1 | 1 | - | - | 1 | 3 | - | 1 | 76 | 94 | - |
| Guam | - | - | - | - | - | - | - | 3 | - | 13 | - |
| P.R. | - | - | - | - | - | 3 | 108 | 110 | 46 | 88 | 28 |
| V.I. | U | U | U | U | U | U | U | U | U | U | U |
| Amer. Samoa | U | U | U | U | U | U | U | U | U | U | U |
| C.N.M.I. | U | - | - | - | - | - | 98 | 8 | 54 | - | - |

N: Not notifiable U: Unavailable -: no reported cases

*Additional information about areas displaying "U" for cumulative 1998 Tuberculosis cases can be found in Notice to Readers, MMWR Vol. 47, No. 2, p. 39.

TABLE III. Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending June 27, 1998, and June 21, 1997 (25th Week)

| Reporting Area | H. Influenzae, invasive | | Hepatitis (Viral), by type | | | | Measles (Rubeola) | | | | Total | |
|----------------|----------------------------|--------------|----------------------------|--------------|--------------|--------------|-------------------|--------------|-----------|--------------|--------------|--------------|
| | Cum. 1998* | Cum. 1997 | A | | B | | Indigenous | | Imported† | | Cum. 1998 | Cum. 1997 |
| | | | Cum. 1998 | Cum. 1997 | Cum. 1998 | Cum. 1997 | 1998 | Cum. 1998 | 1998 | Cum. 1998 | | |
| UNITED STATES | 539 | 590 | 10,456 | 13,296 | 3,715 | 4,438 | 1 | 23 | - | 13 | 36 | 73 |
| NEW ENGLAND | 33 | 33 | 132 | 305 | 52 | 81 | - | - | - | 1 | 1 | 10 |
| Maine | 2 | 3 | 13 | 41 | - | 5 | - | - | - | - | - | - |
| N.H. | 5 | 4 | 7 | 18 | 10 | 5 | - | - | - | - | - | 1 |
| Vt. | 2 | 2 | 11 | 7 | 1 | 3 | - | - | - | - | - | - |
| Mass. | 22 | 21 | 41 | 150 | 16 | 37 | - | - | - | 1 | 1 | 8 |
| R.I. | 2 | 2 | 9 | 26 | 25 | 8 | - | - | - | - | - | - |
| Conn. | - | 1 | 51 | 63 | - | 23 | - | - | - | - | - | 1 |
| MID. ATLANTIC | 76 | 84 | 650 | 1,142 | 527 | 656 | - | 9 | - | 2 | 11 | 16 |
| Update N.Y. | 31 | 18 | 155 | 146 | 148 | 124 | - | 2 | - | - | 2 | 4 |
| N.Y. City | 13 | 23 | 185 | 497 | 143 | 257 | - | - | - | - | - | 5 |
| N.J. | 28 | 27 | 140 | 169 | 90 | 126 | U | 7 | U | 1 | 8 | 2 |
| Pa. | 4 | 16 | 170 | 330 | 146 | 149 | U | - | U | 1 | 1 | 5 |
| E.N. CENTRAL | 83 | 88 | 1,319 | 1,420 | 368 | 743 | - | 9 | - | 3 | 12 | 8 |
| Ohio | 34 | 45 | 172 | 194 | 35 | 41 | - | - | - | 1 | 1 | - |
| Ind. | 22 | 8 | 89 | 144 | 36 | 53 | - | 2 | - | 1 | 3 | - |
| Ill. | 23 | 24 | 218 | 356 | 66 | 144 | - | - | - | - | - | 6 |
| Mich. | - | 11 | 745 | 619 | 215 | 229 | - | 7 | - | 1 | 8 | 2 |
| Wis. | 4 | - | 95 | 107 | 16 | 276 | - | - | - | - | - | - |
| W.N. CENTRAL | 39 | 28 | 857 | 982 | 171 | 263 | - | - | - | - | - | 11 |
| Minn. | 25 | 19 | 80 | 90 | 16 | 23 | - | - | - | - | - | 2 |
| Iowa | 1 | 3 | 373 | 143 | 30 | 20 | - | - | - | - | - | - |
| Mo. | 8 | 3 | 346 | 537 | 98 | 192 | - | - | - | - | - | 1 |
| N. Dak. | - | - | 3 | 9 | 4 | 3 | - | - | - | - | - | - |
| S. Dak. | - | 2 | 8 | 14 | 1 | - | - | - | - | - | - | - |
| Nebr. | - | 1 | 15 | 41 | 7 | - | - | - | - | - | - | 8 |
| Kans. | 5 | - | 52 | 148 | 15 | 17 | U | - | U | - | - | - |
| S. ATLANTIC | 115 | 98 | 910 | 677 | 542 | 524 | 1 | 2 | - | 5 | 7 | 3 |
| Del. | - | - | 2 | 14 | - | 3 | - | - | - | 1 | 1 | - |
| Md. | 35 | 40 | 169 | 112 | 80 | 78 | - | - | - | 1 | 1 | - |
| D.C. | - | - | 30 | 14 | 6 | 21 | - | - | - | - | 1 | 1 |
| Va. | 12 | 7 | 127 | 92 | 53 | 60 | - | - | - | - | - | - |
| W. Va. | 4 | 3 | 1 | 6 | 3 | 9 | - | - | - | 2 | 2 | - |
| N.C. | 15 | 16 | 49 | 103 | 104 | 108 | - | - | - | - | - | - |
| S.C. | 4 | 3 | 16 | 64 | 3 | 59 | - | - | - | - | - | 1 |
| Ga. | 24 | 20 | 241 | 128 | 86 | 57 | - | - | - | 1 | 1 | - |
| Fla. | 21 | 9 | 275 | 144 | 207 | 129 | 1 | 2 | - | - | 2 | - |
| E.S. CENTRAL | 31 | 38 | 173 | 335 | 187 | 347 | - | - | - | - | - | 1 |
| Ky. | 4 | 4 | 12 | 42 | 22 | 21 | - | - | - | - | - | - |
| Tenn. | 20 | 22 | 117 | 205 | 134 | 229 | - | - | - | - | - | - |
| Ala. | 7 | 8 | 44 | 49 | 31 | 38 | - | - | - | - | - | - |
| Miss. | U | 2 | U | 39 | U | 59 | U | U | U | U | U | 1 |
| W.S. CENTRAL | 30 | 28 | 2,040 | 2,658 | 631 | 521 | - | - | - | - | - | 4 |
| Ark. | - | 2 | 43 | 123 | 46 | 40 | - | - | - | - | - | - |
| La. | 13 | 6 | 40 | 108 | 47 | 63 | - | - | - | - | - | - |
| Okla. | 15 | 18 | 282 | 823 | 31 | 18 | - | - | - | - | - | - |
| Tex. | 2 | 2 | 1,675 | 1,604 | 507 | 400 | - | - | - | - | - | 4 |
| MOUNTAIN | 66 | 64 | 1,658 | 1,960 | 419 | 422 | - | - | - | - | - | 7 |
| Mont. | - | - | 51 | 50 | 3 | 5 | - | - | - | - | - | - |
| Idaho | - | 1 | 136 | 76 | 18 | 14 | - | - | - | - | - | - |
| Wyo. | - | 1 | 23 | 20 | 2 | 14 | - | - | - | - | - | - |
| Colo. | 14 | 9 | 128 | 224 | 52 | 83 | - | - | - | - | - | - |
| N. Mex. | 5 | 6 | 83 | 152 | 167 | 145 | - | - | - | - | - | - |
| Ariz. | 37 | 33 | 1,052 | 906 | 114 | 84 | - | - | - | - | - | 5 |
| Utah | 4 | 3 | 116 | 337 | 38 | 49 | - | - | - | - | - | - |
| Nev. | 6 | 21 | 69 | 195 | 25 | 28 | U | - | U | - | - | 2 |
| PACIFIC | 66 | 131 | 2,717 | 3,816 | 818 | 881 | - | 3 | - | 2 | 5 | 13 |
| Wash. | 3 | 2 | 570 | 261 | 63 | 34 | - | - | - | 1 | 1 | - |
| Oreg. | 29 | 22 | 205 | 192 | 57 | 55 | - | - | - | - | - | - |
| Calif. | 28 | 101 | 1,907 | 3,268 | 687 | 775 | - | 3 | - | 1 | 4 | 10 |
| Alaska | 1 | 1 | 12 | 22 | 6 | 11 | - | - | - | - | - | - |
| Hawaii | 5 | 5 | 23 | 73 | 5 | 6 | U | - | U | - | - | 3 |
| Guam | - | - | - | - | - | 3 | U | - | U | - | - | - |
| P.R. | 2 | - | 23 | 176 | 245 | 332 | - | - | - | - | - | - |
| V.I. | U | U | U | U | U | U | U | U | U | U | U | U |
| Amer. Samoa | U | U | U | U | U | U | U | U | U | U | U | U |
| C.N.M.I. | - | 5 | 1 | 1 | 28 | 26 | U | - | U | - | - | 1 |

N: Not notifiable U: Unavailable - : no reported cases

*Of 131 cases among children aged <5 years, serotype was reported for 73 and of those, 31 were type b.

†For imported measles, cases include only those resulting from importation from other countries.

TABLE III. (Cont'd.) Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending June 27, 1998, and June 21, 1997 (25th Week)

| Reporting Area | Meningococcal Disease | | Mumps | | | Pertussis | | | Rubella | | |
|----------------|-----------------------|-----------|-------|-----------|-----------|-----------|-----------|-----------|---------|-----------|-----------|
| | Cum. 1998 | Cum. 1997 | 1998 | Cum. 1998 | Cum. 1997 | 1998 | Cum. 1998 | Cum. 1997 | 1998 | Cum. 1998 | Cum. 1997 |
| UNITED STATES | 1,472 | 1,977 | 3 | 229 | 339 | 78 | 2,050 | 2,537 | 5 | 253 | 64 |
| NEW ENGLAND | 60 | 116 | - | - | 7 | 15 | 358 | 534 | - | 33 | - |
| Maine | 4 | 11 | - | - | - | - | 5 | 6 | - | - | - |
| N.H. | 4 | 12 | - | - | - | 6 | 34 | 61 | - | - | - |
| Vt. | 1 | 2 | - | - | - | 3 | 34 | 166 | - | - | - |
| Mass. | 33 | 62 | - | - | 2 | 6 | 269 | 279 | - | 6 | - |
| R.I. | 3 | 8 | - | - | 4 | - | 3 | 12 | - | - | - |
| Conn. | 23 | 21 | - | - | 1 | - | 13 | 10 | - | 27 | - |
| MID. ATLANTIC | 139 | 214 | - | 15 | 37 | 10 | 259 | 203 | 1 | 112 | 19 |
| Upstate N.Y. | 57 | - | - | 3 | 8 | 10 | 130 | 76 | 1 | 105 | 4 |
| N.Y. City | 15 | 34 | - | 4 | 1 | - | 4 | 46 | - | 2 | 15 |
| N.J. | 37 | 41 | U | 1 | 6 | U | 5 | 11 | U | 4 | - |
| Pa. | 51 | 82 | U | 7 | 22 | U | 120 | 70 | U | 1 | - |
| E.N. CENTRAL | 221 | 288 | - | 40 | 37 | 4 | 187 | 248 | - | - | 3 |
| Ohio | 83 | 104 | - | 19 | 14 | - | 71 | 72 | - | - | - |
| Ind. | 41 | 33 | - | 4 | 4 | 4 | 53 | 29 | - | - | - |
| Ill. | 47 | 85 | - | 1 | 8 | - | 14 | 34 | - | - | - |
| Mich. | 26 | 38 | - | 16 | 10 | - | 32 | 31 | - | - | - |
| Wis. | 24 | 28 | - | - | 1 | - | 17 | 82 | - | - | 3 |
| W.N. CENTRAL | 118 | 145 | - | 20 | 11 | 14 | 168 | 139 | - | 13 | - |
| Minn. | 19 | 24 | - | 10 | 4 | 14 | 100 | 87 | - | - | - |
| Iowa | 18 | 31 | - | 6 | 6 | - | 39 | 8 | - | - | - |
| Mo. | 48 | 66 | - | 3 | - | - | 12 | 22 | - | 2 | - |
| N. Dak. | - | 1 | - | 1 | - | - | - | 1 | - | - | - |
| S. Dak. | 6 | 4 | - | - | - | - | 4 | 3 | - | - | - |
| Nebr. | 4 | 5 | - | - | 1 | - | 6 | 3 | - | - | - |
| Kans. | 23 | 14 | U | - | - | U | 8 | 15 | U | 11 | - |
| S. ATLANTIC | 254 | 328 | 1 | 33 | 41 | 5 | 128 | 207 | 3 | 9 | 17 |
| Del. | 1 | 4 | - | - | - | - | 1 | - | - | - | - |
| Md. | 22 | 34 | - | - | 1 | - | 25 | 77 | - | - | - |
| D.C. | - | 5 | - | - | - | - | 1 | 2 | - | - | - |
| Va. | 23 | 34 | - | 4 | 6 | - | 6 | 25 | - | - | 1 |
| W. Va. | 7 | 13 | - | - | - | - | 1 | 4 | - | - | - |
| N.C. | 36 | 59 | 1 | 8 | 7 | 2 | 44 | 46 | 2 | 5 | 10 |
| S.C. | 37 | 38 | - | 4 | 10 | 1 | 14 | 11 | - | - | 6 |
| Ga. | 58 | 61 | - | 1 | 5 | 1 | 6 | 6 | 1 | 1 | - |
| Fla. | 70 | 80 | - | 16 | 12 | 1 | 28 | 36 | - | 3 | - |
| E.S. CENTRAL | 103 | 143 | - | 1 | 19 | - | 48 | 48 | - | - | 1 |
| Ky. | 16 | 38 | - | - | 3 | - | 18 | 12 | - | - | - |
| Tenn. | 40 | 44 | - | 1 | 3 | - | 17 | 18 | - | - | - |
| Ala. | 47 | 44 | - | - | 6 | - | 13 | 12 | - | - | 1 |
| Miss. | U | 17 | U | U | 7 | U | U | 6 | U | U | - |
| W.S. CENTRAL | 179 | 192 | - | 31 | 41 | 6 | 135 | 72 | 1 | 68 | 3 |
| Ark. | 22 | 25 | - | - | - | 1 | 18 | 2 | - | - | - |
| La. | 35 | 38 | - | 2 | 11 | - | 1 | 11 | - | - | - |
| Okla. | 26 | 23 | - | - | - | - | 13 | 9 | - | - | - |
| Tex. | 96 | 106 | - | 29 | 30 | 5 | 103 | 50 | 1 | 68 | 3 |
| MOUNTAIN | 85 | 118 | - | 21 | 46 | 19 | 456 | 678 | - | 5 | 4 |
| Mont. | 3 | 7 | - | - | - | - | 1 | 7 | - | - | - |
| Idaho | 4 | 8 | - | 3 | 2 | 11 | 188 | 432 | - | - | 1 |
| Wyo. | 3 | 1 | - | 1 | 1 | - | 7 | 4 | - | - | - |
| Colo. | 19 | 33 | - | 4 | 3 | 7 | 93 | 174 | - | - | - |
| N. Mex. | 15 | 19 | N | N | N | - | 64 | 32 | - | 1 | - |
| Ariz. | 29 | 27 | - | 4 | 29 | - | 68 | 15 | - | - | 3 |
| Utah | 9 | 11 | - | 3 | 6 | 1 | 23 | 4 | - | 2 | - |
| Nev. | 3 | 12 | U | 6 | 5 | U | 12 | 10 | U | 1 | - |
| PACIFIC | 305 | 433 | 2 | 68 | 100 | 5 | 313 | 408 | - | 13 | 17 |
| Wash. | 41 | 51 | - | 5 | 12 | 3 | 139 | 179 | - | 9 | 3 |
| Oreg. | 56 | 89 | N | N | N | 2 | 19 | 23 | - | - | - |
| Calif. | 203 | 290 | 2 | 48 | 71 | - | 149 | 193 | - | 2 | 7 |
| Alaska | 1 | 1 | - | 2 | 5 | - | 2 | 2 | - | - | - |
| Hawaii | 4 | 2 | U | 13 | 12 | U | 4 | 11 | U | 2 | 7 |
| Guam | - | 1 | U | - | 1 | U | - | - | U | - | - |
| P.R. | 4 | 8 | - | 1 | 4 | - | - | - | U | - | - |
| V.I. | U | U | U | U | U | U | 2 | U | U | U | U |
| Amer. Samoa | U | U | U | U | U | U | U | U | U | U | U |
| C.N.M.I. | - | - | U | 2 | 4 | U | 1 | - | U | - | - |

N: Not notifiable U: Unavailable -: no reported cases

TABLE IV. Deaths in 122 U.S. cities,* week ending
June 27, 1998 (25th Week)

| Reporting Area | All Causes, By Age (Years) | | | | | | P&M [†] Total | Reporting Area | All Causes, By Age (Years) | | | | | | P&M [†] Total | |
|---------------------|----------------------------|-------|-------|-------|------|----|---------------------------|-----------------------|----------------------------|-------|-------|-------|------|-----|---------------------------|--|
| | All Ages | >65 | 45-64 | 25-44 | 1-24 | <1 | | | All Ages | >65 | 45-64 | 25-44 | 1-24 | <1 | | |
| NEW ENGLAND | 328 | 237 | 56 | 21 | 8 | 8 | 15 | S. ATLANTIC | 3,234 | 1,947 | 731 | 363 | 82 | 106 | 101 | |
| Boston, Mass. | U | U | U | U | U | U | U | Atlanta, Ga. | 1,971 | 1,158 | 478 | 224 | 38 | 73 | 40 | |
| Bridgeport, Conn. | 27 | 21 | 3 | 2 | 1 | - | 1 | Baltimore, Md. | 206 | 113 | 51 | 31 | 6 | 3 | 16 | |
| Cambridge, Mass. | 15 | 13 | 1 | 1 | - | - | 2 | Charlotte, N.C. | 93 | 59 | 16 | 9 | 3 | 6 | 8 | |
| Fall River, Mass. | 22 | 16 | 4 | 2 | - | - | - | Jacksonville, Fla. | 148 | 102 | 25 | 14 | 4 | 3 | 4 | |
| Hartford, Conn. | U | U | U | U | U | U | U | Miami, Fla. | 107 | 72 | 25 | 7 | 4 | 3 | - | |
| Lowell, Mass. | 28 | 18 | 7 | 3 | - | - | 2 | Norfolk, Va. | 50 | 37 | 3 | 4 | 2 | 3 | 2 | |
| Lynn, Mass. | 9 | 8 | 1 | - | - | - | - | Richmond, Va. | 59 | 30 | 16 | 8 | 2 | - | - | |
| New Bedford, Mass. | 25 | 19 | 4 | 2 | - | - | 1 | Savannah, Ga. | 53 | 28 | 6 | 11 | 6 | 2 | 5 | |
| New Haven, Conn. | 42 | 32 | 7 | 1 | - | - | 2 | St. Petersburg, Fla. | 75 | 58 | 9 | 6 | - | - | 6 | |
| Providence, R.I. | 47 | 35 | 4 | 2 | 3 | 3 | - | Tampa, Fla. | 163 | 110 | 29 | 16 | 6 | 2 | 11 | |
| Somerville, Mass. | 5 | 4 | 1 | - | - | - | - | Washington, D.C. | 295 | 166 | 73 | 33 | 12 | 11 | 7 | |
| Springfield, Mass. | 27 | 17 | 6 | 2 | 1 | - | 1 | Wilmington, Del. | 14 | 14 | - | - | - | - | - | |
| Waterbury, Conn. | 32 | 20 | 9 | 3 | - | - | - | E.S. CENTRAL | 795 | 536 | 162 | 56 | 20 | 18 | 54 | |
| Worcester, Mass. | 49 | 34 | 9 | 3 | 1 | 2 | 8 | Birmingham, Ala. | 180 | 126 | 30 | 7 | 8 | 6 | 16 | |
| MID. ATLANTIC | 2,134 | 1,431 | 458 | 168 | 46 | 30 | 100 | Chattanooga, Tenn. | 67 | 46 | 17 | 4 | - | - | 5 | |
| Albany, N.Y. | 46 | 28 | 8 | 9 | - | 1 | 3 | Knoxville, Tenn. | 86 | 63 | 15 | 3 | 3 | 2 | 8 | |
| Allentown, Pa. | 74 | 60 | 12 | 1 | 1 | - | 9 | Lexington, Ky. | 65 | 39 | 17 | 5 | 2 | 2 | 8 | |
| Buffalo, N.Y. | 74 | 60 | 12 | 1 | 1 | - | 9 | Memphis, Tenn. | 113 | 71 | 26 | 11 | 3 | 2 | 8 | |
| Camden, N.J. | 29 | 13 | 8 | 5 | - | 3 | 1 | Mobile, Ala. | 89 | 55 | 17 | 13 | - | 4 | 1 | |
| Elizabeth, N.J. | 22 | 9 | 10 | 1 | 1 | 1 | - | Montgomery, Ala. | 65 | 48 | 12 | 2 | 2 | 1 | 1 | |
| Erie, Pa. | 40 | 32 | 6 | 2 | - | - | - | Nashville, Tenn. | 130 | 88 | 28 | 11 | 2 | 1 | 7 | |
| Jersey City, N.J. | 31 | 19 | 8 | 2 | 1 | 1 | - | W.S. CENTRAL | 1,344 | 862 | 290 | 112 | 42 | 38 | 74 | |
| New York City, N.Y. | 1,156 | 770 | 252 | 102 | 21 | 11 | 46 | Austin, Tex. | 70 | 45 | 13 | 6 | 4 | 2 | 5 | |
| Newark, N.J. | U | U | U | U | U | U | U | Baton Rouge, La. | 42 | 23 | 12 | 6 | 1 | - | - | |
| Paterson, N.J. | 19 | 10 | 5 | 1 | 2 | - | - | Corpus Christi, Tex. | 44 | 32 | 10 | 1 | - | 1 | 5 | |
| Philadelphia, Pa. | 300 | 183 | 75 | 21 | 12 | 9 | 13 | Dallas, Tex. | 223 | 133 | 52 | 19 | 11 | 8 | 3 | |
| Pittsburgh, Pa. | 44 | 27 | 11 | 4 | 2 | - | 3 | El Paso, Tex. | 72 | 46 | 15 | 6 | - | 5 | 7 | |
| Reading, Pa. | 30 | 25 | 3 | 1 | 1 | - | 3 | Fl. Worth, Tex. | 91 | 67 | 15 | 6 | - | 3 | 4 | |
| Rochester, N.Y. | 124 | 89 | 26 | 5 | 2 | 2 | 9 | Houston, Tex. | 315 | 201 | 64 | 30 | 12 | 8 | 19 | |
| Schenectady, N.Y. | 24 | 19 | 4 | 1 | - | - | 2 | Little Rock, Ark. | 72 | 43 | 13 | 7 | 3 | 6 | 4 | |
| Scranton, Pa. | 28 | 23 | 4 | 1 | - | - | 2 | New Orleans, La. | 125 | 81 | 28 | 11 | 2 | 3 | - | |
| Syracuse, N.Y. | 58 | 48 | 5 | 2 | 2 | 2 | 6 | San Antonio, Tex. | 186 | 129 | 38 | 13 | 6 | - | 18 | |
| Trenton, N.J. | 61 | 43 | 14 | 4 | - | - | 2 | Shreveport, La. | U | U | U | U | U | U | U | |
| Utica, N.Y. | 24 | 15 | 5 | 3 | 1 | - | - | Tulsa, Okla. | 104 | 62 | 30 | 7 | 3 | 2 | 9 | |
| Yonkers, N.Y. | 23 | 18 | 2 | 3 | - | - | 1 | MOUNTAIN | 907 | 598 | 187 | 80 | 20 | 22 | 60 | |
| E.N. CENTRAL | 1,960 | 1,320 | 389 | 182 | 60 | 38 | 92 | Albuquerque, N.M. | 94 | 53 | 25 | 12 | 3 | 1 | 8 | |
| Akron, Ohio | 44 | 31 | 7 | 5 | 1 | - | - | Boise, Idaho | 35 | 21 | 9 | 5 | - | - | - | |
| Canton, Ohio | 28 | 20 | 5 | 2 | 1 | - | 2 | Colo. Springs, Colo. | 49 | 34 | 7 | 5 | 1 | 2 | 1 | |
| Chicago, Ill. | 386 | 234 | 82 | 39 | 17 | 13 | 21 | Denver, Colo. | 111 | 78 | 20 | 7 | 1 | 5 | 14 | |
| Cincinnati, Ohio | 107 | 82 | 16 | 5 | - | 4 | 13 | Las Vegas, Nev. | 202 | 134 | 45 | 14 | 3 | 6 | 9 | |
| Cleveland, Ohio | 150 | 104 | 28 | 6 | 3 | 9 | 3 | Ogden, Utah | U | U | U | U | U | U | U | |
| Columbus, Ohio | 156 | 103 | 33 | 11 | 8 | 1 | 10 | Phoenix, Ariz. | 160 | 100 | 32 | 15 | 7 | 6 | 11 | |
| Dayton, Ohio | 108 | 74 | 22 | 10 | 1 | 1 | 5 | Pueblo, Colo. | 27 | 16 | 4 | 6 | 1 | - | 1 | |
| Detroit, Mich. | 224 | 122 | 59 | 30 | 11 | 2 | 9 | Salt Lake City, Utah | 112 | 76 | 27 | 7 | 1 | 1 | 5 | |
| Evansville, Ind. | 52 | 39 | 6 | 6 | - | - | 1 | Tucson, Ariz. | 117 | 86 | 18 | 9 | 3 | 1 | 11 | |
| Fort Wayne, Ind. | 47 | 39 | 5 | 2 | 1 | - | 1 | PACIFIC | 2,190 | 1,570 | 391 | 146 | 43 | 40 | 157 | |
| Gary, Ind. | 14 | 10 | 3 | 1 | - | - | - | Berkeley, Calif. | 11 | 7 | 2 | 1 | - | 1 | 1 | |
| Grand Rapids, Mich. | 49 | 36 | 9 | 3 | - | - | 1 | Fresno, Calif. | 118 | 92 | 12 | 8 | 4 | 2 | 10 | |
| Indianapolis, Ind. | 155 | 100 | 38 | 9 | 4 | 4 | - | Glendale, Calif. | 39 | 28 | 10 | 1 | - | - | 1 | |
| Lansing, Mich. | 32 | 24 | 4 | 1 | 3 | - | 1 | Honolulu, Hawaii | 82 | 49 | 23 | 4 | 2 | 4 | 7 | |
| Milwaukee, Wis. | 119 | 87 | 24 | 5 | 3 | - | 4 | Long Beach, Calif. | 59 | 46 | 12 | 1 | - | - | 8 | |
| Peoria, Ill. | 51 | 41 | 8 | 1 | 1 | - | - | Los Angeles, Calif. | 771 | 544 | 139 | 63 | 17 | 8 | 48 | |
| Rockford, Ill. | 47 | 33 | 10 | 4 | - | - | 3 | Pasadena, Calif. | 25 | 19 | 5 | 1 | - | - | 3 | |
| South Bend, Ind. | 63 | 48 | 8 | 3 | 3 | 1 | 1 | Portland, Oreg. | 164 | 127 | 24 | 5 | 3 | 5 | 7 | |
| Toledo, Ohio | 83 | 60 | 17 | 3 | 3 | - | 5 | Sacramento, Calif. | 201 | 153 | 33 | 8 | 3 | 4 | 21 | |
| Youngstown, Ohio | 45 | 33 | 5 | 6 | - | 1 | 1 | San Diego, Calif. | 112 | 80 | 19 | 8 | 2 | 3 | 10 | |
| W.N. CENTRAL | 754 | 545 | 121 | 35 | 21 | 17 | 43 | San Francisco, Calif. | 129 | 83 | 29 | 14 | - | 3 | 11 | |
| Des Moines, Iowa | 158 | 111 | 26 | 13 | 6 | 2 | 11 | San Jose, Calif. | 154 | 108 | 28 | 12 | 3 | 3 | 14 | |
| Duluth, Minn. | 24 | 17 | 5 | 1 | 1 | - | 2 | Santa Cruz, Calif. | 48 | 38 | 9 | 1 | - | - | 2 | |
| Kansas City, Kans. | U | U | U | U | U | U | U | Seattle, Wash. | 119 | 82 | 18 | 9 | 6 | 4 | 1 | |
| Kansas City, Mo. | 94 | 58 | 16 | 1 | 2 | 2 | 6 | Spokane, Wash. | 83 | 47 | 11 | 5 | - | - | 6 | |
| Lincoln, Neb. | 32 | 27 | 4 | 1 | - | - | 2 | Tacoma, Wash. | 95 | 67 | 17 | 5 | 3 | 3 | 7 | |
| Minneapolis, Minn. | 161 | 130 | 19 | 3 | 5 | 4 | 11 | TOTAL | 13,646 [‡] | 9,046 | 2,785 | 1,133 | 340 | 317 | 697 | |
| Omaha, Neb. | 71 | 52 | 9 | 4 | 5 | 1 | 2 | | | | | | | | | |
| St. Louis, Mo. | 120 | 74 | 29 | 8 | 1 | 8 | - | | | | | | | | | |
| St. Paul, Minn. | 94 | 76 | 13 | 4 | 1 | - | 9 | | | | | | | | | |
| Wichita, Kans. | U | U | U | U | U | U | U | | | | | | | | | |

U: Unavailable - : no reported cases

*Mortality data in this table are voluntarily reported from 122 cities in the United States, most of which have populations of 100,000 or more. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.

[†]Pneumonia and influenza.

[‡]Because of changes in reporting methods in this Pennsylvania city, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

[§]Total includes unknown ages.

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